

**A SURVEY ON PESTICIDE RESIDUES OF IMPORTED
AGRICULTURAL PRODUCTS CIRCULATED IN
GYEONGGI-DO, REPUBLIC OF KOREA**

S. T. Kim^{*}, M. S. Oh, S. K. Mun, Y. H. Kim, S. H. Lee, S. W. Shin,
M. Y. Seo, Y. S. Cho, M. K. Lee, C. Y. Kim, J. B. Lee

Suwon Agricultural Products Inspection Team, Suwon, Republic of Korea

This study was conducted to monitor the current status of pesticide residues in imported agricultural products circulated in Gyeonggi-do, Republic of Korea. A total of 121 samples of 33 different items of imported fruits and vegetables were collected during 2013. The samples were analyzed to determine the concentrations of 218 pesticides by multi class pesticide multiresidue methods. The analysis of 156 pesticides utilized time-of-flight mass spectrometry (TOF MS) after gas chromatography with an electron capture detector (GC-ECD), and gas chromatography-nitrogen/phosphorus detector (GC/NPD). The analysis of 62 pesticides was performed by liquid chromatography-tandem mass spectrometry (LC/MS/MS) after ultra-performance liquid chromatography coupled to photodiode array detection (UPLC/PDA), and high performance liquid chromatography with fluorescence detector (HPLC/FLD). Eight pesticides were detected in 12 agricultural product samples (9.9%). The kinds of pesticide detected in samples were methidathion, boscalid, azoxystrobin, endosulfan, carbaryl, chlorpyrifos, pyrimethanil and fludioxonil. Sample recoveries ranged from 80.4 to 113.8% with relative standard deviations, ranged 0.8~6.8%. Limit of detection ranged from 0.001 to 0.05 mg/kg. Of fruits, 6 samples including grapes had pesticide residues ranged 0.03~1.5 mg/kg and no detection was observed in vegetable samples. Of 12 origins, U.S.A., Chile and Philippines samples had pesticide residues, however, no samples had violative residues. The results show that the pesticide residues in investigated imported fruits and vegetables are acceptable; however, the potential risk of pesticide residues cannot be overlooked. Therefore, the results also emphasize the need for continuous monitoring of pesticide residues in imported agricultural products.

Keywords: pesticide residues, imported agricultural products, multi class pesticide multiresidue methods

* Corresponding author: obbadallyu@gg.go.kr